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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,928	09/20/2001	Shuuji Yano	Q66287	9968

7590 07/02/2003
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,928

Applicant(s)

YANO ET AL.

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 09/950,790. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference is that $N_z = (n_x - n_z) / (n_x - n_y)$ is in a range from 0.1 to 0.4 instead of 0.6 to 0.9 for the retardation sheet as recited in claim 1 of both applications. Both ranges have the same order of 10^1 .

Art Unit: 1772

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Drawings

2. The corrected or substitute drawings were received on 12/11/01. These drawings are accepted by the Examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In independent claim 1, and claim 8, it is unclear what the symbol $\overset{\circ}{=}$ denotes.

Since applicant states that $n_x \overset{\circ}{=} n_y$ encompasses $n_x = n_y$, the symbol $\overset{\circ}{=}$ has been interpreted as being equivalent to $\leq = \geq$.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1772

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al. (US 5,999,243).

Kameyama et al. has an optical sheet (element) which comprises a retardation film and a transparent layer provided on one of the opposite surfaces of said retardation film (abstract). The retardation film (layer) exhibits $N_z = (n_x - n_z) / (n_x - n_y)$ of 1.1 or smaller which encompasses the claimed range of 0.6 to 0.9, and $(n_x - n_y)d$ (Δnd) is 100 to 720 nm which encompasses the claimed range of 200 to 350 nm. The thickness of the transparent retardation layer is from 5 to 500 μm . (column 10, lines 1-70). d is a thickness of said retardation film, n_z is a refractive index in a direction of an Z axis expressing a direction of the thickness d of said retardation film, n_x is a refractive index in a direction of an X axis expressing a direction of said retardation film in a plane perpendicular to said Z axis while said X axis also expresses a direction of the highest in-plane refractive index, and n_y is a refractive index in a direction of a Y axis expressing a direction of said retardation film perpendicular both to said Z axis and to said X axis.

Kameyama et al. teaches a laminate of retardation layers which differ in retardation. Since Kameyama et al. teaches that it is preferred that at least one retardation layer exhibits n_z greater than n_x , n_y (at least one of the in-plane refractive indexes), wherein $n_z > n_y$ for N_z less than 1, and since N_z can be greater than 1 (column 10, lines 1-70), it then follows that the other film can have a $n_z < n_y$ which satisfies the equation $n_x \leq n_y > n_z$.

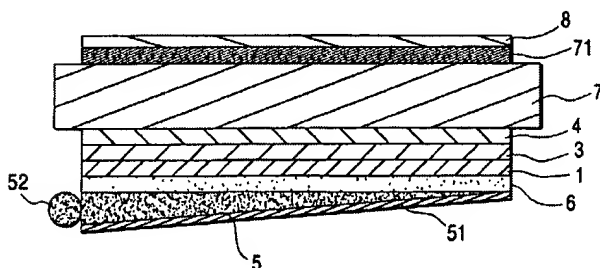
The retardation layers may be made of an oriented stretched (coating) film or liquid crystal (column 10, lines 15-60). When made of film, organic material (polymer) is given as an embodiment (column 4, lines 1-25). When made of liquid crystal, organic cholesteric liquid

Art Unit: 1772

crystal polymer is given as an embodiment. The thickness of the cholesteric liquid crystal polymer layer is preferably 1 to 50 μm (column 5, lines 55-70).

Kameyama et al. teaches a polarizer with a laminate of the optical (retardation film laminate) sheet and a polarizing film (plate) (column 3, lines 15-30). Since the polarizing film (plate) is disposed so that the transmission axis of the polarizing film (plate) corresponding to the Z-axis direction of said retardation sheet becomes parallel to the direction of polarization (oscillation in Z-axis) of the light which has been linearly polarized with the transparent retardation layer (1/4 wavelength plate) (column 12, lines 1-5), it can be inferred that the polarizing film is disposed on a side of the optical sheet opposite to the transparent cholesteric liquid crystal layer 1 side of the optical sheet so that said X-axis direction, which is perpendicular to the Z-axis direction, of said retardation film 3 (sheet) of said optical sheet is parallel with an axis of absorption (X-axis) of said retardation film 3. See embodiment on next page.

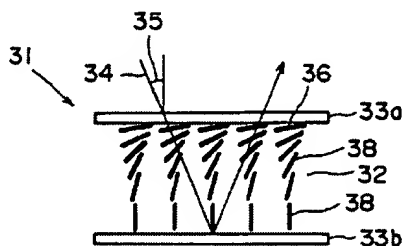
- 1, 11, 12: Oriented layer of liquid crystal polymer
(retardation film for compensation, circularly polarized
light separation layer, etc.)
- 2: Substrate
- 21: Oriented film
- 3: Retardation film (1/4 wavelength plate)
- 4: Polarizing plate
- 5: Surface light source (light guide plate)
- 51: Reflecting layer
- 52: Light source
- 7: Liquid crystal cell (liquid crystal display)
- 71: Polarizing plate



7. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 5,805,253) in view of Kameyama et al.

Mori et al. teaches a liquid crystal display device which has a polarizer (polarizing plate on each of the two optical sheets in such a manner that the two polarizing axes are intersected at right angles (i.e. cross-nicole) (column 24, lines 1-50). The two optical sheets have a sum of absolute value of a retardation value Re_1 and that the liquid crystal cell has a sum of absolute value of a retardation layer Re_2 such that $0.2 Re_2 \leq Re_1 \leq 2.0 Re_2$ (column 4, lines 1-20) which encompasses the claimed range of $0.5 Re_2 \leq Re_1 \leq 1.3 Re_2$ wherein Re is defined by $(n_x + n_y)/2 - n_z\} d_2$ where d_2 is the layer thickness (column 3, lines 15-70).

Mori et al. shows an embodiment of the orientation of the liquid crystals. This is a hybrid alignment which has vertical alignment on one substrate and horizontal alignment on the other substrate, which is a homolog of vertical alignment on both substrates.



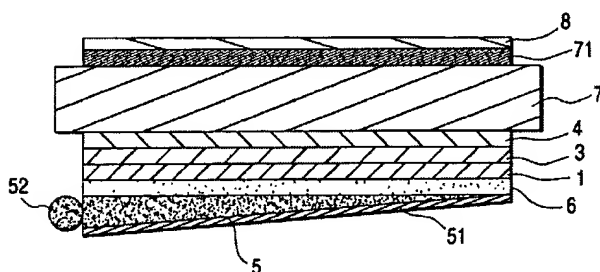
Mori et al. fails to teach that the claimed phase retarders (optical compensatory sheets) exhibit $n_x \Leftrightarrow n_y > n_z$ and that the polarizers comprise a laminate of a polarizing film and a phase retarder which exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ of 0.6 to 0.9, and $(n_x - n_y)d$ of 200 to 250 nm.

Kameyama et al. is discussed above and in the figure below teaches a liquid crystal display device comprising a liquid crystal cell 7, a pair of polarizers 4, 71 being provided on

Art Unit: 1772

opposite sides of said cell, wherein a transparent layer in each of said pair of polarizers is positioned on corresponding one of opposite sides of said cell.

- 1, 11, 12: Oriented layer of liquid crystal polymer (retardation film for compensation, circularly polarized light separation layer, etc.)
- 2: Substrate
 - 21: Oriented film
- 3: Retardation film ($\frac{1}{4}$ wavelength plate)
- 4: Polarizing plate
- 5: Surface light source (light guide plate)
 - 51: Reflecting layer
 - 52: Light source
- 7: Liquid crystal cell (liquid crystal display)
 - 71: Polarizing plate



Kameyama et al. teaches that the polarizer is a laminate of an optical (retardation film laminate) sheet and a polarizing film (plate) (column 3, lines 15-30).

has an optical sheet (element) which comprises a retardation film and a transparent layer provided on one of the opposite surfaces of said retardation film (abstract). The retardation film (layer) exhibits $N_z = (n_x - n_z) / (n_x - n_y)$ of 1.1 or smaller which encompasses the claimed range of 0.6 to 0.9, and $(n_x - n_y)d$ (Δnd) is 100 to 720 nm which encompasses the claimed range of 200 to 250 nm. The thickness of the transparent retardation layer is from 5 to 500 μm (column 10, lines 1-70).

Kameyama et al. teaches a laminate film of retardation layers, which differ in phase retardation. Since Kameyama et al. teaches that it is preferred that at least one retardation layer exhibits n_z greater than n_x , n_y (at least one of the in-plane refractive indexes), wherein $n_z > n_y$ for

Art Unit: 1772

N_z less than 1, and since N_z can be greater than 1 (column 10, lines 1-70), it follows that the other phase retarder film has a $n_z < n_y$ which satisfies the equation $n_x \leq n_y > n_z$.


Since Kameyama et al. teaches that color change compensation efficiency and functional wavelength range width are improved with the phase retardation laminate film (column 10, lines 1-20, 45-60), it would have been obvious to one of ordinary skill in the art to have used the phase retarder and polarizer laminate of Kameyama et al. as the phase retarder and polarizer in the invention of Mori et al. in order to obtain a liquid crystal display with the desired color change compensation efficiency and functional wavelength range width.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SH
Sow-Fun Hon
06/26/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 6/27/03